

**Work Order ID 55060**

January 5, 2010 2:37:18 PM



Page 1

Item ID: D117-762-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 05/01/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 15/01/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date: 10-1-05 Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D3582

Rev A

100

0.00



DOCUMENT CONTROL

DC

0.00

Document Control

Memo

Photocopy bluefile &amp; type labels per PPP D117-762-041 CHG001

110

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Determine square end of tube and deburr  
2-Drill #30 pilot holes using DT8678.  
3- open holes to 5/16"

MB

10-01-06

120

0.00



BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

Bend tube as per program D3582 on CNC Bender and Dwg D3582. Use 5/16" locator pin on buggy "A".

MB

10-01-06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

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Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130

0.00



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1-Cut Fwd end of the tube using DT8185

2-Cut Aft end using DT8185

3-Deburr ends

4-Drill Aft Cap holes using DT8678 \*\*\*DO NOT OPEN AFT CAP HOLE\*\*\*

5-Locate DT 8973 & Drill Ground wire hole on top of Tube.

6-Install 3/16 cleco in Ground wire hole ,then drill all X-Boltholes using 3/16" drill.

7-Drill pilot holes for wearplates using DT8974

8-Open wearplate holes to Ø19/64" (0.297") as per Dwg D3582.

9- open ground wear holes to 0.391" as per section B-B

10-Open Aft Cap holes using .209" drill.

11-Drill pilot holes for section D-D and E-E. Holes must be laid out by hand. Mark out Center line and make sure that 6.65 and 5.906 measurements are respected. Double check before drilling, do not open holes to finish size.

WB  
10-01-06

DD  
10-1-7

DD  
10-1-8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

140

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Weld fwd cap D2964 per dwg D3582 and QSI 004

A/R AL ROD

Batch:

M112860

2-Grind flush

150

0.00



QC10- Inspect visual per QSI004- ground welds

QC

Memo

0.00

Quality Control

160

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control



86 10/01/11

9/01/11

2) 8 10/01/11

2) 8 10/01/11



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	Chemical Conversion Coat per QSI005 4.1	0.00							
	HandFinish	0.00							
	Hand Finishing								
	Memo								
180	QC3- Inspect Part Finish	0.00							
	QC	0.00							
	Quality Control								
	Memo								

MB 10-01-12

1 10/1/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 05/01/2010 Start Qty: 1.00



Cust. Item ID:

Required Date: 15/01/2010 Required Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

190

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Open X-Bolt holes to finish size as per Dwg D3582, all sections

2-Counter Sink X-BOLT holes as per Dwg D3582

3-Deburr and blow out chips from inside of tube, prep. tube for welding.

4-Bond web as per Dwg D3582 & QSI 015

A/R 241 Sike Flex

Batch:

M112395

Exp Date:

12/31/30

5-Weld x-bolt spacers(D2973) as per Dwg D3582 section B-B.

A/R AL ROD

Batch:

M112860

6-Grind welds flush

A.M 10-01-14

200

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

⇒ S10604

(40)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

Run Start

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

210

QC5- Inspect part completeness to step on W/O

0.00

2) 5.06.14

(42)



QC

Memo

0.00

Quality Control

215

Pressure Wash per QSI005 4.3

0.00

=) JH 10-01-12

(X1)



HandFinish

Memo

0.00

Hand Finishing

220

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

1/11/3588

=) JH 10-01-18

(X1)



Powdercoat

Memo

0.00

Powder Coating

START TIME 10:15 AM  
OVEN TEMPERATURE: 320°F  
FINISH TIME: 10:45 AM

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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# Work Order ID 55060

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Item ID: D117-762-041

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Start Date: 05/01/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 15/01/2010 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

230

QC3- Inspect Part Finish

0.00



BR 10-01-21

①

①

QC

Memo

0.00

Quality Control

240

HandFinishing

0.00



BR 10-01-21

①

HandFinish

Memo

0.00

Hand Finishing

Install Wearplate & Ground Wire inserts as per Dwg D3582.

P70

~~Last page~~

250

HandFinishing

0.00



HandFinish

Memo

0.00

Hand Finishing

1-Inspect for Foreign objects  
2-Install Aft cap as per Dwg D3582, Detail "C"  
A/R 241 Sika Flex Batch: M112345.  
Exp Date: 10/02  
3-Install Wearplates as per Dwg D3582,  
Note: Install Bolt and wa

BR 10-01-21 ①

M 10/01/21

ORING LUBE M101223  
Wing Walk  
as per dwg  
Batch: 112900.

M-10/02/16 ①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D117-762-041 PAR #: 7 <sup>See NCR 10-011</sup> Fault Category: Prod. Skid tubes NCR: Yes (No) DQA: / Date: 10-02-04  
 Resolution: re-work Disposition: re-work QA: N/C Closed: / Date: /

NCR: <u>55060</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10-02-04	250	Upon assembly of the D3508-9 wear plate, it was noticed that the holes in the tube were too narrow and causing the wear plate to lift in the center when tightened.	<u>/</u> QS1042	Drill jig feed hole angle slightly changed (came in) with use, due to mild O.D crushing on the tube from bending. DT8974 is Reworked.	See NCR 10-011	<u>/</u> 10-02-04	<u>/</u> QS1042	<u>/</u> 10-02-04
		R.C. Tooling.	<u>CP</u> 10-02-11 QS1042	On the 2 most feed holes on the D3508-9 wear plate, slot the holes, square, to max 0.060" (or as necessary), to allow the bolts to tighten	<u>DP</u> 10-2-11	<u>S</u> 10-02-11	<u>CP</u> 10-02-04 QS1042	<u>/</u> 10-02-04
			<u>CP</u> 10-02-11 QS1042	Without any bending up of the wear plate. * Open/slot, square to 0.060" maximum towards center line.	<u>DP</u> 10-2-11	<u>S</u> 10-02-11	<u>CP</u> 10-02-04 QS1042	<u>/</u> 10-02-04

NOTE: Date & initial all entries

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Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00



8/10/2/16

QC

Memo

0.00



Quality Control

270

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D117-762-041

Location:

PPP Rev:

PPPSY 880

Pc 10/2/18

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/02/18

MF

10-2-18



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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# Picklist Print

January 5, 2010 2:37:23 PM

Page 1

Work Order ID: 55060

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube

Comments: IPP RevD: add pressure wash DD 09.12.11 verified by:EC

Start Date: 05/01/2010

Required Date: 15/01/2010

Start Qty: 1.00

Required Qty: 1.00

Component Item Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2962-150 3.540 Outer Tube, Extrut		Manufactured	No			110	Each	36.0000	1.0000			

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

36

28672

36

D2964

Manufactured No

140 Each

29.0000 1.0000



Cap

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

29

14101

29

D2971

Manufactured No

190 Each

36.0000 1.0000



Cross Bolt Spacer

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

36

44445

36

MB 10-01-06

EX

1 BE 10/01/11

1 BE 10/01/09

W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Required Date: 15/01/2010

Comments: IPP RevD: add pressure wash DD 09.12.11 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Dr Iss	Status
D3584-1 		Manufactured	No			190	Each	1.0000	1.0000			

Web

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

54349

1

BSS

1 n 10/1/12

D2973



Manufactured No

190

Each

197.0000

2.0000



Cross Bolt Spacer

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

14636

197

197

2

BE 10/01/14

D3662-3



Manufactured No

190

Each

33.0000

1.0000



Crossbolt Spacer

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

44456

33

33

1

BE 10/01/14

W/O:		WORK ORDER CHANGES					
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Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3662-1 		Manufactured	No			190	Each	21.0000	3.0000			
Crossbolt Spacer												

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	21	
39022	3	
39585	18	

ALS4-1032-130 	Purchased	No				240	Each	2,717.000	36.0000			
Insert												

3 BE 10/01/14

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	2717	
110511 ✓	2717	

ALS4-428-165 	Purchased	No				240	Each	38.0000	2.0000			
Inserts												

36 BK 10-01-21.

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
FP	38	
6989 ✓	38	

2 BK 10-01-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Alt Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2965  Cap, 105 Skidtube		Manufactured	No			250	Each	54.0000	1.0000			

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP4

54

52057 ✓

54

D3508-3  
  
Wearplate

Manufactured No

250

Each

6.0000

1.0000



1 BL 10-01-21.

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP21

6

51386 ✓

6

D3508-9  
  
Wearplate

Manufactured No

250

Each

2.0000

1.0000



1 BL 10-01-21

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

54580

2

46596

2

1 BL 10-01-21.



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

January 5, 2010 2:37:23 PM

Work Order ID: 55060

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube


Comments: IPP RevD: add pressure wash DD 09.12.11 verified by:EC

Start Date: 05/01/2010

Required Date: 15/01/2010

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3558-3  Gasket		Manufactured	No			250	Each	11.0000	1.0000			

Warehouse  
Location

Loc Qty

Loc Code

Main Warehouse


ST

11

51391 ✓

11

1 *BR* 10-01-21

D3558-9  Gasket		Manufactured	No			250	Each	15.0000	1.0000			
--	--	--------------	----	--	--	-----	------	---------	--------	--	--	--

Warehouse  
Location

Loc Qty

Loc Code

Main Warehouse


ST

15

50928 ✓

15

1 *BR* 10-01-21

D3558-11  Gasket		Manufactured	No			250	Each	13.0000	1.0000			
---	--	--------------	----	--	--	-----	------	---------	--------	--	--	--

Warehouse  
Location

Loc Qty

Loc Code

Main Warehouse

ST

13

40399

1

42254 ✓

12

1 *BR* 10-01-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

January 5, 2010 2:37:23 PM

Work Order ID: 55060



Parent Item: D117-762-041



Parent Item Name: Replacement Skidtube

Start Date: 05/01/2010

Required Date: 15/01/2010

Comments: IPP RevD: add pressure wash DD 09.12.11 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Priority Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Issued	Date Issued	Status
D3558-13 		Manufactured	No			250	Each	9.0000	1.0000			
Gasket												

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	9	
40400	4	
42255	5	

1 BR 10-01-21

D3508-11 		Manufactured	No			250	Each	7.0000	1.0000			
Wearplate												

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	7	
40398	2	
46880	5	

1 BR 10-01-21

D3508-13 		Manufactured	No			250	Each	5.0000	1.0000			
Wearplate												

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST 54645	5	
42252	5	

1 BR 10-01-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

January 5, 2010 2:37:23 PM

Work Order ID: 55060



Parent Item: D117-762-041



Parent Item Name: Replacement Skidtube

Start Date: 05/01/2010

Required Date: 15/01/2010

Comments: IPP RevD: add pressure wash DD 09.12.11 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3492-051  Plug Assembly		Manufactured	No			250	Each	20.0000	2.0000			

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	20	
44633 ✓	20	

D3492-049  Plug Assembly		Manufactured	No			250	Each	16.0000	2.0000			
--------------------------------	--	--------------	----	--	--	-----	------	---------	--------	--	--	--

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	16	
40356	1	
44632 ✓	15	

2 Bk 10-01-26

2 Bk 10-01-26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

January 5, 2010 2:37:23 PM

Work Order ID: 55060



Parent Item: D117-762-041



Parent Item Name: Replacement Skidtube

Start Date: 05/01/2010

Required Date: 15/01/2010

Comments: IPP RevD: add pressure wash DD 09.12.11 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3492-053 		Manufactured	No			250	Each	68.0000	6.0000			
Plug Assembly												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP 66

54641 ✓ 66

Main Warehouse

ST 2

44063 2

AN960JD10L

Purchased

No

250

Each

4,867.000 2.0000



Washer

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST 4867

101291 16

104885 16

105793 197

109632 174

110985 ✓ 4464

6 BR 10-01-21

2 BR 10-01-21



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

January 5, 2010 2:37:23 PM

Work Order ID: 55060



Parent Item: D117-762-041



Parent Item Name: Replacement Skidtube

Start Date: 05/01/2010

Required Date: 15/01/2010

Comments: IPP RevD: add pressure wash DD 09.12.11 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty	Pick	Qty Issued	Date Issued	Status
AN3C4A 		Purchased	No		250	Each	1,195.000	28.0000				
BOLT												

Warehouse	Loc Qty	Loc Code
<u>Location</u>		
Main Warehouse		
ST	1195	
112314	13	
112720	12	
112724	3	
112829	1	
112991	2	
113121	64	
113226	586	
113359	14	
113422 ✓	500	

28.00 10-01-21

AN3C5A 	Purchased	No			250	Each	609.0000	2.0000				
Bolt												

Warehouse	Loc Qty	Loc Code
<u>Location</u>		
Main Warehouse		
ST 113644	609	
111424	8	
111707	69	
112314	1	
113121	231	
113149	300	

2 BR 10-01-21.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

January 5, 2010 2:37:23 PM

Work Order ID: 55060



Parent Item: D117-762-041



Parent Item Name: Replacement Skidtube

Start Date: 05/01/2010

Required Date: 15/01/2010

Comments: IPP RevD: add pressure wash DD 09.12.11 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty to Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN960JD416L

Purchased

No

250

Each

795.0000

2.0000



Washer

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

795

105078

4

107008

54

108583

40

110153 ✓

297

112492

400

2 BR 10-01-21

AN960C10L

Purchased

No

250

Each

416.0000

28.0000



washer

## Warehouse

## Loc Qty

## Loc Code

### Location

OFFSHORE

FG

100

103585

100

Main Warehouse

ST

316

112116

156

112612

160

NAS149C00332R

113288

QB BR 10-01-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

January 5, 2010 2:37:23 PM

Work Order ID: 55060

Parent Item: D117-762-041

Parent Item Name: Replacement Skidtube


Start Date: 05/01/2010

Required Date: 15/01/2010

Comments: IPP RevD: add pressure wash DD 09.12.11 verified by:EC


Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN4-4A 		Purchased	No			250	Each	119.0000	2.0000			
Bolt												


Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	119	
101291	3	
106918	1	
108138 ✓	58	
111295	57	

2 BL 10-01-21

NAS1611-012 		Purchased	No			250	Each	60.0000	6.0000			
O-RING												

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	60	
108673 ✓	60	

6 BL 10-01-21

NAS1611-015 		Purchased	No			250	Each	20.0000	2.0000			
O-RING												

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	20	
107178 ✓	20	

2 BL 10-01-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Page 12

January 5, 2010 2:37:23 PM

Work Order ID: 55060



Parent Item: D117-762-041



Parent Item Name: Replacement Skidtube

Start Date: 05/01/2010

Required Date: 15/01/2010

Comments: IPP RevD: add pressure wash DD 09.12.11 verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
NAS1611-016		Purchased	No			250	Each	117.0000	2.0000			

O-RING

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	117	
107178	17	
112492	50	
113524	50	

2 10-01-21

January 5, 2010 2:37:23 PM

Shop Packet Print

Page 12



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

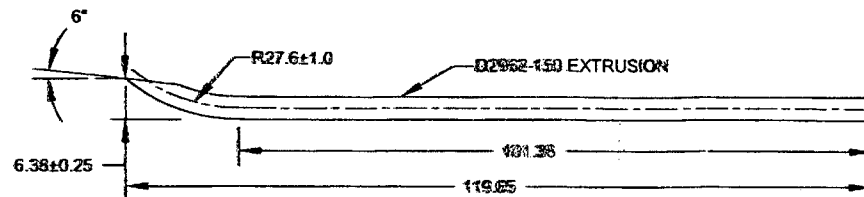
**NOTE:** Date & initial all entries

# PARTS LIST FOR D3582-041 SKIDTUBE ASSEMBLY

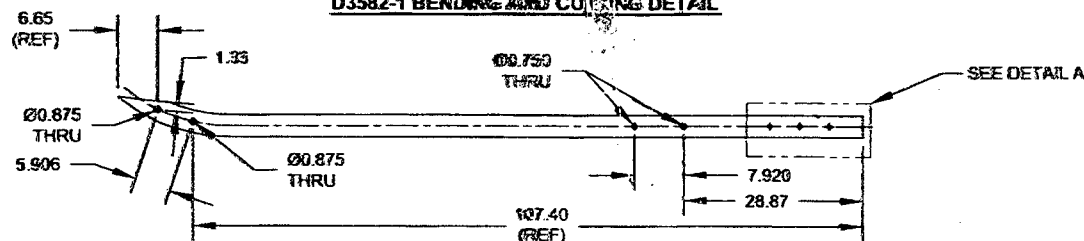
Qty	Part Number	Description
X	D3582-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2964	CAP
1	D2965	CAP
1	D2971	CROSS BOLT SPACER
2	D2973	CROSS BOLT SPACER
2	D3492-045	PLUG ASSEMBLY
2	D3492-051	PLUG ASSEMBLY
6	D3492-053	PLUG ASSEMBLY
1	D3508-5	WEARPLATE
1	D3508-9	WEARPLATE
1	D3508-11	WEARPLATE
1	D3508-13	WEARPLATE
1	D3558-3	GASKET
1	D3558-9	GASKET
1	D3558-11	GASKET
1	D3558-13	GASKET
1	D3584-1	WEB
3	D3662-1	CROSS BOLT SPACER
1	D3662-3	CROSS BOLT SPACER
36	AELS-1032-130	INSERT
2	ALS7-42B-165	INSERT
28	AN3C4A	BOLT
2	AN3-5A	BOLT
2	AN4-4A	BOLT
28	AN960C10L	WASHER
2	AN960JD10L	WASHER
2	AN960JD416L	WASHER

## GENERAL NOTES:

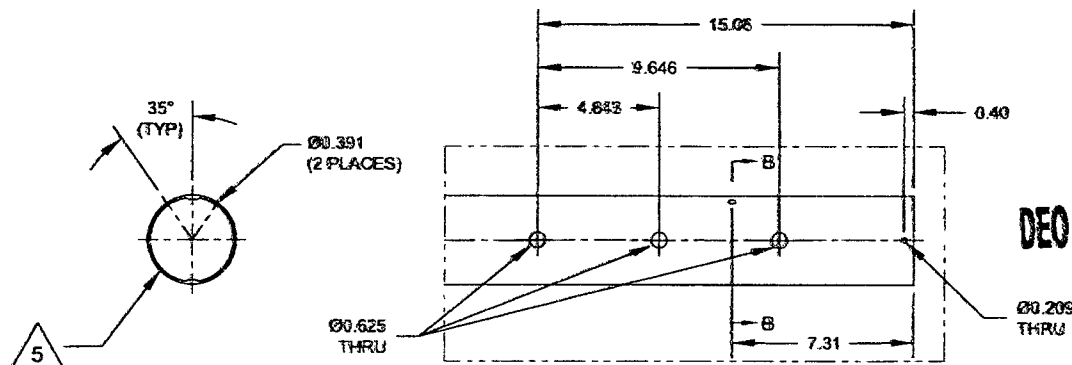
- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- WELDING TO BE DONE PER DART QSI 004
- INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-2411-291 ADHESIVE PER DART QSI 015 AFTER BENDING
- USE DART DRILL TEMPLATE DT2900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-2411-291.
- DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED LOCATIONS.
- FINISH:
  - CHEMICAL CONVERSION COAT PER DART QSI 035 4.1 PRIOR TO INSERTING D3584-1 WEB.
  - POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3.
  - ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4



D3582-1 BENDING AND CUTTING DETAIL



D3582-1 DRILLING DETAIL



SECTION B-B  
SCALE 1:5

DETAIL A  
SCALE 1:5

RELEASED  
01-11-22

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 050060

10-1-05

A NEW ISSUE		PH	07.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN	BY	DART AEROSPACE USA, INC PORT KADLOCK, WA	
DRAWN	BY		
CHECKED	BY	DRAWING NO.	REV. A
WFG. APPR.	BY	D3582	SHEET 1 OF 2
APPROVED	BY	TITLE	SCALE
IDE APPR.	BY	BK 117 SKIDTUBE ASSEMBLY	1:20
DATE	07.06.08	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS RELEASED BY THE EXPRESS CONDITION THAT IT NOT BE USED FOR ANY PURPOSE OR FOR ANY COMMERCIAL OR OTHER PURPOSE WITHOUT THE WRITTEN AUTHORIZATION OF DART AEROSPACE USA, INC.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

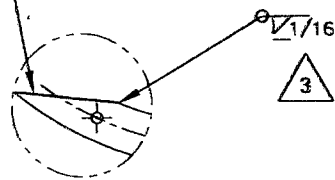
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

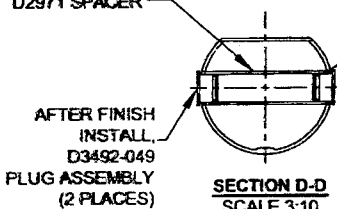
**NOTE:** Date & initial all entries

D2964 CAP  
(GRIND FLUSH)



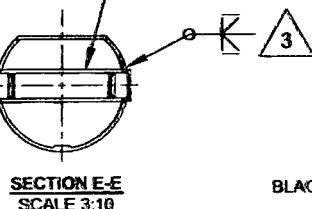
**DETAIL C**  
SCALE 1:10

D2971 SPACER



**SECTION D-D**  
SCALE 3:10

AFTER FINISH  
INSTALL  
D3492-051  
PLUG ASSEMBLY  
(2 PLACES)



**SECTION E-E**  
SCALE 3:10

**SECTION D-D NOTES**

AFTER BENDING AND DRILLING ASSEMBLY  
PERFORM THE FOLLOWING:

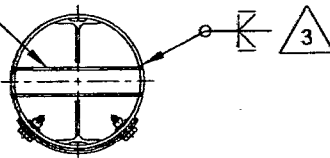
1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2971 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.750 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-049 PLUG ASSEMBLY (2 PLACES)

**SECTION E-E NOTES**

AFTER BENDING AND DRILLING ASSEMBLY  
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-3 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.672 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-051 PLUG ASSEMBLY (2 PLACES)

D2973 SPACER  
(2 PLACES)



**SECTION F-F**  
SCALE 3:10

**SECTION F-F NOTES**

AFTER BENDING AND DRILLING ASSEMBLY  
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2973 SPACER (2 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.625 DRILL TO REMOVE SPILL OVER

D3584-1 WEB (REF)

D3662-1 SPACER  
(3 PLACES)

AFTER FINISH, INSTALL  
AELS-1032-130  
INSERT (36 PLACES)

AN30C4A BOLT (1)  
AN960C10L WASHER (1)  
(28 PLACES)

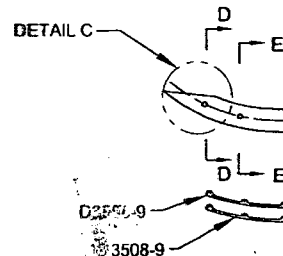
**SECTION G-G**  
SCALE 3:10

**SECTION G-G NOTES**

AFTER BENDING AND DRILLING ASSEMBLY  
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-1 SPACER (3 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.515 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-053 PLUG ASSEMBLY (6 PLACES)

DETAIL C

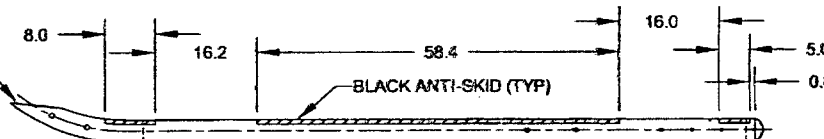


NO BOLTS AT  
THESE LOCATIONS



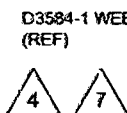
**D3582-041 ASSEMBLY DETAIL**

BLACK ANTI-SKID



**D3582-041 BLACK ANTI-SKID DETAIL**

AFTER FINISH, INSTALL  
ALS7-428-165 INSERT (1)  
AN4-4A BOLT (1)  
AN960JD416L WASHER (1)  
(2 PLACES)



**DETAIL H**  
SCALE 1:5

DEO ATTACHED

RELEASED

AN3-5A BOLT (1)  
AN960JD10L WASHER (1)  
(2 PLACES)

DESIGN	410 55060	DART AEROSPACE USA, INC
DRAWN		PORT HADLOCK, WA
CHECKED		DRAWING NO. REV. A
MFG. APPR.		D3582 SHEET 2 OF 2
APPROVED		TITLE SCALE
DE APPR.		BK 117 SKIDTUBE ASSEMBLY 1:20
DATE	07.06.08	

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

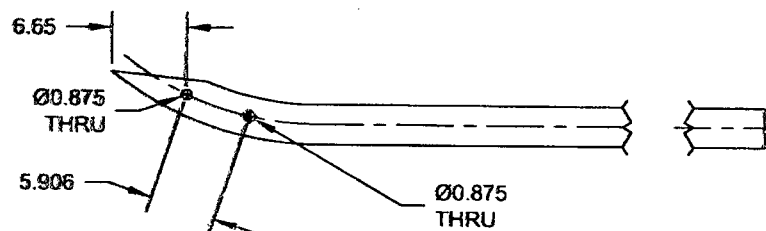
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DRAWING NO. D3582	TITLE BK 117 SKIDTUBE ASSEMBLY	REV. A	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3582-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>PH</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>		DE APPR. <i>[Signature]</i>		
DATE 09.04.06	DATE 04.04.06	DATE 09.04.06	DATE 09/04/06		DATE 09.04.06		

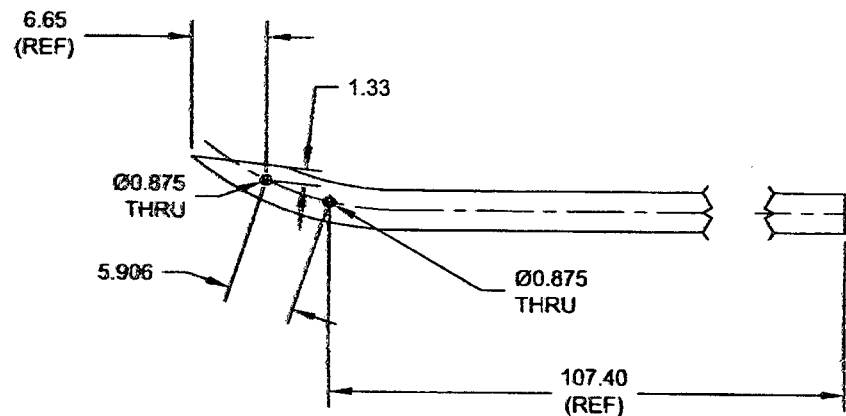
FOR EASE OF MANUFACTURE AND TO ENSURE THE FIT OF BRISTOL WIRESTRIKE SKID GEAR DEFLECTOR:  
UPDATE DIMENSIONING OF 2 FWD HOLES ON SHEET 1 AS SHOWN

**IS:**



*w/o 55060*

**WAS:**



**RELEASED**  
09/04/06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

NO. 220

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barday Elliott  
Job number: 54161  
Part number: D17-762-041  
Description: 17 skid tube  
Welding Process: Tig[☒] Mig[ ]  
Base material: Aluminum  
Current: AC[ ] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[ ]  
Penetration: pass[☒] fail[ ]

UNACCEPTABLE

Cracks: pass[☒] fail[ ]  
Undercut: pass[☒] fail[ ]  
Pin holes: pass[☒] fail[ ]  
Overlap (cold lap): pass[☒] fail[ ]  
Porosity (surface): pass[☒] fail[ ]  
Coloration: pass[☒] fail[ ]

Qualifier P.D. Date of Test Coupon 09/12/10

Welder Barday Elliott Date of Test Coupon 09/12/10

The above named individual is qualified in accordance with AWS D17.1.2001 to weld